Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1.   (Currently amended) A method for separating a mixture, the method comprising:
performing one or more <u>coarse</u> classification separations on a slurry including a
separation liquid and one or more particulate media materials, wherein performing the one or
more <u>coarse</u> classification separations separates from the slurry a coarse fraction containing
coarse particles of the one or more media materials, the coarse particles having a particle size
greater than a first particle size threshold;

performing one or more <u>fine</u> classification separations to separate from the slurry
a fine fraction containing fine particles of the one or more media materials, the fine particles
having a particle size less than a second particle size threshold, wherein the one or more <u>coarse</u>
classification separations separating from the slurry a coarse fraction and the one or more <u>fine</u>
classification separations to separate from the slurry the fine fraction produce a classified media
having a controlled particle size distribution of the particulate media materials;

combining the classified media with a mixture to be separated to generate a
separation mixture, wherein the mixture to be separated includes plastic; and

performing one or more density separations on the separation mixture<u>;</u>

<u>wherein performing the one or more coarse classification separations and the one
or more fine classification separations or performing the one or more density separations,
comprises:</u>

<u>separating the slurry or the separation mixture in a first density separator
to generate a first fraction and a second fraction;</u>

<u>separating the first fraction in a second density separator to generate a
third fraction;</u>

<u>recovering liquid from the third fraction;</u>

combining the recovered liquid and the second fraction; and

separating the second fraction in a third density separator.

2. (Currently amended) The method of claim 1, further comprising:

regenerating the classified media by performing a classification separation of the media after performing at least one density separation of the one or more density separations on the separation mixture.

3. (Currently amended) A The method for separating a mixture, the method of claim 1, further comprising:

performing one or more classification separations on a slurry including a separation liquid and one or more particulate media materials to produce a classified media having a controlled particle size distribution of the particulate media materials;

combining the classified media with a mixture to be separated to generate a separation mixture, wherein the mixture to be separated includes plastic;

performing one or more density separations on the separation mixture; and

regenerating the classified media by performing a classification separation of the media after performing at least one density separation of the one or more density separations on the separation mixture, including removing particulate material from the classified media having a particle size smaller than a fine size particle threshold.

4. (Canceled)

5. (Currently amended) The method of claim 1, further comprising:

before performing a first density separation of the one or more density separations on the separation mixture, adding a very coarse fraction of the one or more media materials to the mixture, the very coarse fraction containing media particles that substantially report to separator underflow.

6. (Previously presented) The method of claim 1, wherein:

the first particle size threshold and the second particle threshold are determined by parameters of a separation system.

7.   (Currently amended) The method of claim 1, wherein:

performing one or more coarse classification or density separations on the slurry, performing one or more fine classification separations or performing one or more density separations on the separation mixture, respectively includes separating the slurry or the separation mixture using one or more hydrocyclone separators.

8.   (Currently amended) The method of claim 1, wherein:

performing one or more coarse classification or density separations on the slurry, performing one or more fine classification separations or performing one or more density separations on the separation mixture, respectively, includes separating the slurry or the separation mixture using one or more cylindrical vortex separators.

9.   (Currently amended) The method of claim 1, wherein:

performing one or more coarse classification or density separations on the slurry, performing one or more fine classification separations or performing one or more density separations on the separation mixture, respectively, includes separating the slurry or the separation mixture using one or more hydrocyclone separators and one or more cylindrical vortex separators.

10.   (Currently Amended) The method of claim 1, wherein:

performing one or more coarse classification separations on the slurry, or performing one or more fine classification separations includes separating the slurry using an arrangement of one or more density separators; and

performing one or more density separations on the separation mixture includes separating the separation mixture using the arrangement of one or more density separators.

11.   (Original) The method of claim 1, wherein:

the one or more particulate media materials include one or more of magnetite, titanium dioxide, sand or ferrosilicate.

12. (Canceled)

13. (Previously presented) The method of claim 1, wherein:

the one or more particulate media materials include magnetite and the classified media includes magnetite particles having a particle size distribution in the range from about 5 to about 30 microns.

14. (Previously presented) The method of claim 1, wherein:

the one or more particulate media materials include magnetite and the classified media includes magnetite particles having a particle size distribution in the range from about 5 to about 25 microns.

15. (Canceled)

16. (Currently amended) The method of claim [[15]]1, wherein:

separating the first fraction in a second density separator includes generating the third fraction and a fourth fraction, the third fraction including a larger amount of liquid than the fourth fraction.

17. (Currently amended) The method of claim [[15]]1, wherein:

the first density separator is a hydrocyclone and the second and third density separators are cylindrical vortex separators.

18. (Currently amended) The method of claim [[15]]1, wherein:

the first density separator is a cylindrical vortex separator and the second and third density separators are hydrocyclone separators.

19-31. (Canceled)

32. (Currently amended) The method of claim [[15]]1, wherein the steps of separating the slurry or the separation mixture in a first density separator, separating the first fraction in a second density separator and separating the second fraction in a third density separator include operating a single pump that is coupled to the first, second and third density separators.

33. (Currently amended) The method of claim [[15]]1, wherein recovering liquid from the third fraction includes sending the third fraction to a dewatering screener coupled to an exit port of the second density separator.

34-35. (Canceled)